Product Tests Report

Product name: AUTODOME IP starlight 7000i Camera

Model number and description:
Pendant outdoor model: NDP-7512-Z30, PTZ 2MP HDR 30x clear IP66 pendant
Pendant outdoor model: VG5-ITS1080P-30X6, PTZ dome 2MP 30x IVA TS-2 pendant ITS
Pendant outdoor (IK) model: NDP-7512-Z30K, PTZ 2MP HDR 30x clear IK10 pendant
Indoor in-ceiling model: NDP-7512-Z30CT, PTZ 2MP HDR 30x tinted IP54 in-ceiling
Indoor in-ceiling model: NDP-7512-Z30C, PTZ 2MP HDR 30x clear IP54 in-ceiling

The above-mentioned Bosch Security Systems product has been tested in accordance and was found to comply with the tests listed below which were carried out during the development phase of the product. Please note that for some tests, test conditions exceed the range that Bosch recommends for effective continuous operation of the camera.
Data subject to change without notice.

ENVIRONMENTAL TEST

BS EN 50130-5:1999 Alarm systems Part 5: Environmental test methods	Specific Test Description (Temperatures stated are outside of the camera housing)	Comments	Passed
Dry heat (operational) EN 60068-2-2:2007	Pendant: Temp. +70 °C, duration 48 hours In-ceiling: Temp. +55 °C, duration 48 hours		Yes
Dry heat (endurance) EN 60068-2-2:2007	Temp. +70 °C, duration 21 days.	Outdoor models only.	Yes
Cold (operational) EN 60068-2-1:2007	Pendant: Temp. -40 °C, duration 48 hours In-ceiling: Temp. -10 °C, duration 48 hours		Yes
Cold start test	Power off, soak overnight (12 hours) @ -40 °C, power up unit, unit must power up & function normally within < 30 minutes.	Outdoor models only.	Yes
Damp heat, steady state (endurance) EN 60068-2-78:2001	Temperature +40ºC, Relative Humidity 93%, Duration 21 days.		Yes
Damp heat, cyclic (operational) EN 60068-2-30:2005	Pendant: Temperature +25ºC to +55ºC, Relative humidity 93%, 2 cycles.		Yes
Damp heat, cyclic (endurance) EN 60068-2-30:2005	Temperature +25ºC to +55ºC, Relative humidity 93%, 6 cycles.	Outdoor models only.	Yes
Ingress Protection Rating- IP6X IEC 60529, Edition 2.2, CLAUSE 13.4	No dust ingress; complete protection against contact.	Outdoor models only.	Yes
Water ingress (operational)- IPX6 IEC 60529, Edition 2.2, CLAUSE 14.2.6	At least 3 minutes Water volume: 100 liters per minute	Outdoor models only.	Yes
Ingress Protection Rating- IP5X IEC 60529, Edition 2.2, CLAUSE 13.4	Dust protected (Ingress of dust is not prevented completely, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment; complete protection against contact)	Indoor models only	Yes
Water ingress (operational)- IPX4	5 minutes	Indoor models only	Yes

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BS EN 50130-5:1999 Alarm systems Part 5: Environmental test methods	Specific Test Description (Temperatures stated are outside of the camera housing)	Comments	Passed
IEC 60529, , Edition 2.2, CLAUSE 14.2.4	Water volume: 10 liters per minute Pressure: 100 kPa		
NEMA 4X	Hose down Test Additional Corrosion Test Crushing Resistance Test Mold Stress-Relief Distortion Test Gasket aging Test Resistance To Impact Test	Pendant outdoor (IK) model only	Yes
Vibration sinusoidal (operational) IEC 60068-2-6: Edition 7.0: 2007	Freq. Range 10-150Hz, 0.5g, 3 axes, sweep rate 1 octave/m 1 sweep/ axis		Yes
Vibration sinusoidal (endurance) IEC 60068-2-6 Edition 7.0: 2007	Freq. Range 10-150Hz, 1.0g, 3 axes, sweep rate 1 octave/min 20 sweeps/ axis		Yes
Shock (operational) IEC 60068-2-27 Edition 4.0:2008	Half sine wave 6ms, 10.0g, 6 number of shocks, 3 pulses per direction		Yes
Impact (operational)- IK10 IEC 62262 First Edition Dated 2002-02	Impact energy 20.0 Joule, 3 impacts per point	Pendant outdoor (IK) model only	Yes
Wind speed (150mph wind tunnel test)	Wind Tunnel Test 150mph for 1.0 hours.		Yes
Sound level (audible noise)	< 45 dB		Yes
Transportation Tests (ISTA Procedure 2A)	Atmospheric condition Test Compression Test Drop Test- 970 mm Vibration- Frequency 4Hz, 240 cycles per min, duration 60min.		Yes

ADDITIONAL CERTIFICATIONS

Functional tests description	Description	Comments	Passed
Conformant with NTCIP protocols 1205, 2301, 1101:1996, 2202:2001, 2101:2001, 2102:2003			Yes

ADDITIONAL ENVIRONMENTAL – FUNCTIONAL BOSCH TESTS

Environmental test methods	Specific Test Description	Comments	Passed
MTBF calculation of used components Based on: for electronics, MIL-HDBK-217FN1, GB, GC, 25C.	MTBF > 107,608 hours		Yes
NEMA TS-2 Traffic Controller Assemblies w/NTCIP Requirements	TS 2 Section 2.2.7 Transients, Temperature, Voltage, and Humidity	Outdoor models only.	Yes
NEMA TS-2 Traffic Controller Assemblies w/NTCIP Requirements	TS 2 Section 2.2.8 Vibration - Resonant Search Conduct the resonant frequency search from 5 to 30Hz and back within a period of 12-1/2 minutes in each of the three mutually perpendicular planes	Outdoor models only.	Yes
NEMA TS-2 Traffic Controller Assemblies w/NTCIP Requirements	TS 2 Section 2.2.8 Vibration - Endurance Test Vibrate the test unit in each planes at its resonant Frequency for a period of 1 hour at an amplitude resulting in 0.5g acceleration	Outdoor models only.	Yes
NEMA TS-2 Traffic Controller Assemblies w/NTCIP Requirements	TS 2 Section 2.2.9 Shock (Impact) Test 10 drops the test unit in each planes from the calibrated height with shock force from 9g to 11g	Outdoor models only.	Yes

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Approvals Safety, EMC and Environmental

Specific Approval	Description	Comments	Passed
EMC Europe			**Passed**
EN 55032:2015/AC:2016	Electromagnetic compatibility of multimedia equipment - Emission Requirements, Class A.		Yes
EN 55024:2010 + A1:2015	Information technology equipment - Immunity characteristics - Limits and methods of measurement		Yes
EMC USA			**Passed**
FCC 47 CFR Part 15 Subpart B	Conducted + Radiated Emission based on VERIFICATION procedure, Class A		Yes
Safety Europe			
EN 62368-1	Audio/video, information and communication technology equipment		Yes
EN 60950-1	Information technology equipment – Safety – Part 1: General requirements		Yes
EN 60950-22	Information technology equipment – Safety – Part 22: Equipment to be installed outdoors	Outdoor models only.	Yes
Safety USA + Canada			
UL 62368-1	Audio/video, information and communication technology equipment		Yes
CSA-C22.2 No. 62368-1-14	Audio/video, information and communication technology equipment		Yes
Environmental			
Restriction of Hazardous Substances	2011/65/EU (RoHS) complaint		Yes
Restriction of Hazardous Substances	REACH (no substances prohibited in REACH annex XVII and no information about possible SVHCs contained).		Yes

The product is produced by a manufacturing organization which is certified on **ISO9001** and **ISO14001** standards.

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